

CLAIMS

1. A shifting device for the shifting of a transmission with a shifting shaft (2), upon which said shaft a multiplicity of shifting forks or shifting rockers (hereinafter, "shifting forks") (8, 10, 12, 14) are placed in an axial slidable manner for the carrying out of a shifting procedure, with a selection apparatus (28, 30, 32, 42, 44, 46) for the choice of a shifting fork (8, 10, 12, 14) from the multiplicity of shifting forks (8, 10, 12, 14) for the carrying out of the shifting procedure and with blocking means (52) for the prevention of the movement of non-chosen shifting forks (8, 10, 12, 14), therein characterized in that the elements (2, 8, 10, 12, 14, 20, 22) for the carrying out of the shifting procedure are made from a material of high structural strength and the elements of the selection apparatus (28, 30, 32, 42, 44, 46) and the blocking apparatus (52) are constructed from a material of lesser structural strength.

2. A shifting device in accord with claim 1, therein characterized, in that the elements of the selection apparatus include for each shifting fork (8, 10, 12, 14) ring-shaped engagement units (28, 30, 32), which with the shifting fork (8, 10, 12, 14) are axially affixed and are slidable on the shifting shaft (2) for the carrying out of the shifting procedure, and are rotatable about the shifting shaft (2) for the selection of one of the shifting forks (8, 10, 12, 14) and have the elements of a come-along apparatus (20, 22), which enables an axial displacement of the ring shaped engagement units (28, 30, 32) by means of the axial movement of the shifting shaft (2) for the carrying out of the shifting procedure.

3. A shifting device in accord with claim 1 or 2, therein characterized, in that the ring shaped engagement units (28, 30, 32) on the shifting forks (8, 10, 12, 14) react with the blocking apparatuses (52) for the prevention of an axial movement of non-selected shifting forks on the shifting shaft (2).

4. A shifting device in accord with one of the claims 1 to 3, therein characterized in that the elements of the blocking apparatus include rotatable blocking disks (52), the circumferential surface of which, located in the axial movement zone of the ring-shaped engagement units (28, 30, 32) extend inward,

and the contour thereof is so designed, that the portion thereof, designed as segments (54) of the blocking disks (52) permit an axial movement of the ring shaped engagement units (28, 30, 32) on the shifting shaft (2), while other locations of the blocking disks (52) are enabled to prevent an axial movement of the ring-shaped engagement units (28, 30, 32).

5. A shifting device in accord with one of the claims 1 to 4, therein characterized in that the contoured disks (20, 22) possesses cutouts (24) for the ring-shaped engagement units (28, 30, 32), which coact with projections (16, 18) on the shifting shaft (2), in such a manner that the said projections (16, 18) penetrate the cutouts (24), if the corresponding shifting fork (8, 10, 12, 14) is not shifted and the projections (16, 18) push the contoured disks (20, 22) axially, if the selected shifting fork (8, 10, 12, 14) is displaced.

6. A shifting device in accord with one of the claims 1 to 5, therein characterized, in that the elements of the selection apparatus (28, 30, 32, 42 and 46) possess toothings (36, 38, 40), which mutually mesh and enable a rotation of the elements of the selection apparatus (28, 30, 32, 42, 44, 46) with respect to each other.

7. A shifting device in accord with one of the claims 1 to 6, therein characterized, in that only a part of the ring-shaped engagement unit (32) possesses toothing (36).

8. A shifting device in accord with one of the claims 4 to 7, therein characterized, in that that area of the blocking disks (52) designed as a cutout possesses toothing, which can mesh into the toothing of a ring-shaped engagement unit (28, 30).

9. A shifting device in accord with one of the claims 1 to 8, therein characterized, in that the elements (2, 8, 10, 12, 14, 20, 22) for the carrying out of the shifting procedure are constructed of steel or aluminum.

10. A shifting device in accord with one of the claims 1 to 9, therein characterized, in that the elements (28, 30, 32, 42, 44, 46) of the selection apparatus are made of aluminum or plastic.

11. A shifting device in accord with one of the claims 1 to 10, therein characterized, in that the elements (52) of the blocking apparatus are constructed of aluminum or plastic.

12. A shifting device in accord with one of the claims 1 to 11, therein characterized, in that an actuator (60) is provided for the axial activation of the shifting shaft (2) and an additional actuator (48) is provided, which activates the elements (28, 30, 32, 42, 44, 46) of the selection apparatus and the elements (52) of the blocking apparatus.

13. A shifting device in accord with claim 12, therein characterized, in that a transmission (58) is provided for the setting of a ratio of a rotational movement of the actuator (60) which activates the shifting shaft (2) in an axial movement of the shifting shaft (2).

14. A shifting device in accord with one of the claims 12 or 13, therein characterized, in that electro-mechanical, pneumatic, or hydraulic actuators are provided.